Isotopes

1.Many elements can have more than one given number of **neutrons** in their nucleus.

2.These other forms of the same element are called **isotopes**. Isotopes of the same element have the same chemical properties, but have slightly different physical properties. Many of the heavier isotopes of an element are radioactive, such as Carbon-**14** and Oxygen-**18**, making them useful in science and medicine.

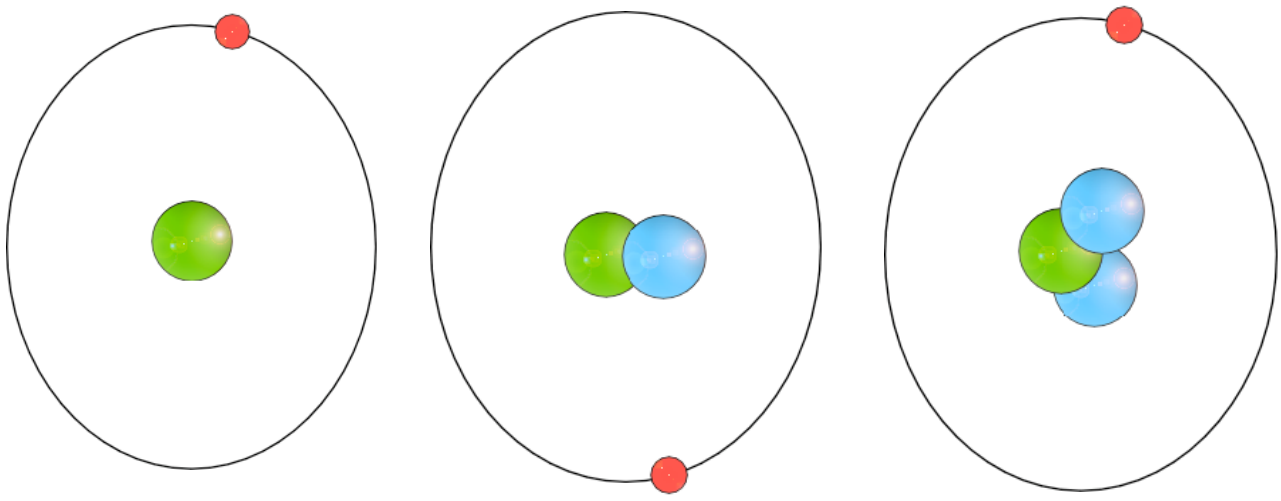
3.The atomic mass listed on the periodic table is the **average** atomic mass of all the isotopes for a particular element found in nature.

A. Carbon for example has an atomic mass of **12.0111**.

B. Since the atomic mass is very close to 12.0, this means that **most** carbon has a mass of 12.

C. Since the mass is just a little more than 12.0, a **small** amount of a heavier isotope of carbon must exist, raising the average atomic mass to just more than 12.0

4.The three isotopes of Hydrogen are shown below.



Normal hydrogen (protium) | Deuterium | Tritium